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Fish, Wildlife & Parks

P.O. Box 1137
Townsend, MT 59644

December 20, 1993

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    Regional Supervisor, Region 3, Bozeman
State Historic Preservation Office, Montana Historical Society
Broadwater Conservation District, Townsend
BCDC, Stream and Lake Committee, Townsend
Pat Barnes Chapter of Trout Unlimited
Bureau of Land Management, Butte
Montana Rail Link, Helena
Townsend District, Helena National Forest, Townsend

Ladies and Gentlemen:

The enclosed Environmental Assessment (EA) has been prepared for the proposed Big Springs Restoration Project. The proposed project will be funded by the United States Forest Service and grant monies made available under the River Restoration Act.

Any questions or comments regarding this proposed project should be addressed to the undersigned by January 2~~1~~8, 1993.

Sincerely,

Ron Spoon

Ron Spoon
Fisheries Biologist

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DATE	ISSUED TO
	JUN 13 2003

DEMCO 32-209

DEPARTMENT OF FISH, WILDLIFE AND PARKS

ENVIRONMENTAL ASSESSMENT

Project Title Big Springs River Restoration Project

Division/Bureau Fisheries/Habitat Protection Bureau

Program River Restoration

Description of Project The project is proposed to enhance trout spawning habitat in the Missouri River adjacent to the outflow of the Big Springs. The contour of an existing gravel/cobble bar will be modified and new spawning gravel will be placed on the bar to provide suitable depth, velocity and substrate composition for salmonid reproduction.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ON ATTACHED PAGES
1. Terrestrial & aquatic life and habitats			X			X
2. Water quality, quantity & distribution			X			X
3. Geology & soil quality, stability & moisture			X			X
4. Vegetation cover, quantity & quality			X			X
5. Aesthetics			X			X
6. Air quality				X		
7. Unique, endangered, fragile, or limited environmental resources				X		
8. Demands on environmental resources of land, water, air & energy				X		
9. Historical & archaeological sites					X	

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ON ATTACHED PAGES
1. Social structures & mores				X		
2. Cultural uniqueness & diversity				X		
3. Local & state tax base & tax revenue				X		
4. Agricultural or industrial production			X			X
5. Human health				X		
6. Quantity & distribution of community & personal income				X		
7. Access to & quality of recreational and wilderness activities				X		
8. Quantity & distribution of employment				X		
9. Distribution & density of population & housing				X		
10. Demands for government services				X		
11. Industrial & commercial activity				X		
12. Demands for energy				X		
13. Locally adopted environmental plans & goals				X		
14. Transportation networks & traffic flows				X		

Other groups or agencies contacted or which may have overlapping jurisdiction None

Individuals or groups contributing to this EA State Hist. Pres. Office

Recommendation concerning preparation of EIS EIS not required

EA prepared by : Ron Spoon
Date: December 17, 1993

Montana Department of Fish, Wildlife and Parks
Fisheries Division
Environmental Assessment

BIG SPRINGS SPAWNING HABITAT RESTORATION

General Purpose: The 1989 Montana Legislature enacted statute 87-1-255 through 259, which directs the Department to administer a river restoration program. The program involves physical projects to improve rivers and their associated lands in order to conserve and enhance fish and wildlife habitat. The legislature established an earmarked funding account to ensure this function would be accomplished. The Missouri River adjacent to the Big Springs provides an opportunity to enhance trout spawning habitat for brown and rainbow trout resident to the Missouri River/Canyon Ferry Lake system.

I. Location of Project

The proposed project at the confluence of the Big Springs and the Missouri River is located in Broadwater County in T4N, R3E, Section 7. The project area is located about 1/2 mile downstream of Toston Dam, and about 23 miles upstream of Canyon Ferry Reservoir.

II. Need for the Project

Under the Department Goal A, one Fisheries Division objective is to "protect existing aquatic habitat and improve degraded stream systems for the welfare of healthy fish populations and other wildlife species and for public enjoyment and use." The River Restoration Program is a tool to help achieve this objective.

Past modifications of the Big Springs to provide irrigation water for agriculture have made it difficult for spawning trout to use available habitat in this short reach of stream. In addition, the construction of Toston Dam, located upstream of the Big Springs, has modified the transport of bedload in the Missouri River in this area, resulting in a shortage of suitably-sized spawning gravel needed for successful reproduction.

Populations of both brown and rainbow trout in the Missouri River/Canyon Ferry System appear to be limited by available spawning habitat. This assumption is based on Department surveys conducted between 1979 and 1993, which consistently demonstrate a top-heavy population structure indicative of limited natural reproduction. The proposed project follows other recent efforts to address this problem.

III. Scope of Project

The Big Springs Restoration project was submitted by the Stream and Lake Committee, a Townsend area sportsmen group interested in improving local fishing opportunity. The project is intended to

modify an existing cobble bar adjacent to the outlet of the Big Springs in order to enhance the site for brown and rainbow trout spawning. Currently, only limited spawning activity occurs at this site. A consultant specializing in fluvial geomorphology will design and construct the proposed project. The sources of funding for the project are the United States Forest Service via the Farm Bill ($20,000) and the MDFWP River Restoration Program ($15,430). Total cost of the project is expected to be $35,430.

Specific improvements designed for the project are as follows:

1. Modify the contour and slope of the bar to create suitable depths and velocities for spawning trout. The area of modified bar will be approximately 250 feet long and 30 feet wide.

2. The outer perimeter of the bar will be secured by using large rock (class I and II rip rap).

3. Optimal-sized spawning gravel will be placed throughout the sloped bar.

4. A barrier to fish passage will be placed at the upstream outlet of the Big Springs to reduce fish loss to the Big Springs irrigation canal.

IV. Environmental Impact Checklist

See attached checklist.

V. Explanation of Impacts to the Physical Environment

1. Terrestrial and Aquatic Life and Habitats

Reconstruction of about 7,500 square feet of cobble bar adjacent to the Big Springs will have moderate effects on aquatic invertebrates and fish species in the Missouri River. Sedimentation will be minimized by performing construction when the bar is nearly or completely dewatered, and disturbance to riparian vegetation will be mitigated by controlling foot traffic and revegetating the site.

2. Water Quality, Quantity and Distribution

Channel disturbance will cause a short-term increase in turbidity. This will be minimized by timing construction activities during the lowest possible water level, when the site will be dewatered. This activity will be exempted through the water quality 3A authorization from the Montana Department of Health and Environmental Sciences. Activities will also be permitted through Section 404 of the Clean Water Act and the Natural Streambed and Land Preservation Act.

3. Geology and Soil Quality and Stability

A limited amount of soil disturbance adjacent to the project area will be caused by providing equipment access to the site. This disturbance will be mitigated by revegetating the access point and providing a walkway to reduce erosion due to foot traffic.

4. Vegetation Cover

A few shrubs and grass species near the construction site will be removed or trampled by heavy equipment. Disturbed areas will be revegetated.

5. Aesthetics

The proposed project design will incorporate measures to maintain or improve aesthetics of the site by revegetating disturbed areas and using natural rock to construct the perimeter of the spawning bar. Within a few months after construction, all sign of construction will disappear and the site will appear in a natural state.

VII. Explanation of Minor Impacts on Human Environment

7. Access to and Quality of Recreation

Fishing access will be interrupted in the short-term by construction activities. A walkway, designed to reduce erosion due to foot traffic, should improve fishing access in the future. In addition, fisherman will likely benefit from long-term benefits of increased spawning activity and juvenile trout production. An interpretive sign will be placed at the area to explain the objective of the project and ask for voluntary compliance to avoid angler disturbance of spawning fish and potential trampling of incubating eggs. If education is insufficient to prevent anglers from trampling eggs, the Fish, Wildlife and Parks Commission recently gave MDFWP the authority to post closure areas for fishing in the Missouri River, and this tool will be available to prevent problems related to trampling of eggs and disturbance of spawning fish.

VIII. Discussion and Evaluation of Reasonable Alternatives

1. No Action Alternative

If the Big Springs spawning bar is not constructed, trout spawning at this site will continue to be very limited. Failure to provide additional spawning habitat will potentially delay recovery of trout populations in the Canyon Ferry Lake/Missouri River system.

2. The Proposed Alternative

The Big Springs Spawning Bar Project is an effort to provide additional spawning habitat for both brown and rainbow trout residing in the Missouri River and Canyon Ferry Reservoir. This proposed project is expected to result in an additional 7,500 square feet of quality spawning habitat. This amount of habitat can support approximately 150 spawning pairs of brown or rainbow trout, yielding a potential production of 30,000 juvenile fish for each species. Therefore, the project will help with recovery of a declining brown trout fishery, and will assist the development of a self-sustaining rainbow trout population in the system.

3. The Hatchery Alternative

Another means of enhancing trout populations in the system may be through additional supplementation of fish raised in trout hatcheries. This alternative was not selected for the following reasons: 1) The Fisheries Management Plan prepared for the Missouri River/Canyon Ferry Reservoir System established a management goal to increase the number of wild, naturally reproduced trout propagated in the Missouri River and other tributaries; 2) Current demands on State hatcheries are in excess of supply; 3) Compared to hatchery-reared trout, naturally reproduced trout are often of higher quality and are better adapted to their living environment; and 4) Providing that the proposed alternative is successful and remains functional for at least five years, the total cost per wild fish produced will be less than the cost of obtaining hatchery-reared trout.

VIII. Environmental Assessment Conclusion Section

1. Is an EIS required? No

This review demonstrates that the planned activities will likely have positive impacts on the physical and human environment. The project will artificially provide spawning gravels at a site where bedload transport has been altered by the presence of Toston Dam.

2. Level of public involvement.

Copies of the EA were sent to the Broadwater Conservation District, Broadwater Stream and Lake Committee, Big Springs Ditch Company, Pat Barnes Chapter of Trout Unlimited, Montana Rail Link, and the Bureau of Land Management.

3. Duration of Comment Period.

Public comment will be accepted through January 2~~7~~8, 1993.

4. Person Responsible for preparing the EA document.

Ron Spoon
Fisheries Biologist
Department of Fish, Wildlife and Parks
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Townsend, MT 59644